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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/540,488

06/23/2005

Naohide Ogawa

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EXAMINER

GLASS, ERICK DAVID

ART UNIT

PAPER NUMBER

2837

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,488	Applicant(s) OGAWA ET AL.	
	Examiner Erick Glass	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-26 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 14-17 and 19-26 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/23/05, 4/28/06, 1/30/07</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14, 16, 17, 19-24, are rejected under 35 U.S.C. 102(b) as being anticipated by Takenaka et al (US 6,064,167).

With respect to claim 14, Takenaka et al. teaches a system for detecting abnormality of a mobile robot having at least a drive motor (fig. 2, 18 and 19), an internal sensor that senses a quantity of state of the internal of the robot and a control unit constituted by an onboard microcomputer (column 2, line 62) that operates the drive motor based on the quantity of state obtained from an output of the internal sensor to move, the control unit comprising: self-diagnosis means (fig. 1, 13) for self-diagnosing whether the quantity of state is an abnormal value, or whether at least one of onboard equipments mounted on the robot including at least the drive motor and the internal sensor is abnormal; abnormality information outputting means for outputting, when an abnormality is self-diagnosed by the self-diagnosis means, information of the abnormality; abnormality degree discriminating means for inputting the output of the abnormality information outputting means and for discriminating degree of abnormality based on the abnormality information (column 8, lines 1-67); and stable state driving

means for driving the robot into a stable state in response to the discriminated degree of abnormality (column 2, lines 1-15).

With respect to claim 16, Takenaka et al. teaches abnormality degree storing means for storing the discriminated degree of abnormality in an internal memory provided in the control unit and in an external memory provided outside the robot (column 3, lines 21-27).

With respect to claim 17, Takenaka et al. teaches wherein the abnormality degree storing means stores the output of the abnormality degree discriminating means and a parameter indicative of the quantity of state of the robot, in an internal memory provided in the control unit and in an external memory provided outside the robot (column 3, lines 21-27).

With respect to claim 19, Takenaka et al. teaches wherein the robot has a body (fig. 1, 2) and a plurality of leg linkages (fig. 1, 3) each swingably connected to the body through a joint and each connected with a foot (fig. 1, 7) at its distal end through a joint (fig. 1, 5c), the internal sensor includes an inclination sensor that generates an output indicative of an inclination of the body of the robot relative to a vertical axis, and the self-diagnosis means self-diagnoses that the inclination sensor is abnormal when the output of the inclination sensor is not within a predetermined range (column 3, lines 51-67; column 4, lines 1-10).

With respect to claim 20, Takenaka et al. teaches wherein the robot has a body (fig. 1, 2) and a plurality of leg linkages (fig. 1, 3) each swingably connected to the body

through a joint and each connected with a foot (fig. 1, 7) at its distal end through a joint; the internal sensor includes an angle detector (fig. 1, 16a-c) that generates an output indicative of at least one of an angle, angular velocity and angular acceleration of the joints (column 6, lines 60-67; column 7, lines 1-8), and the self-diagnosis means self-diagnoses that the angle detector is abnormal when the output of the angle detector is not within a predetermined range.

With respect to claim 21, Takenaka et al. teaches wherein the onboard equipments include an external sensor (column 3, lines 21-29) that generates an output indicative of taken images.

With respect to claim 22, Takenaka et al. teaches wherein the onboard equipments include a floor reaction force detector that detects a floor reaction force acting on the robot, and the self-diagnosis means self-diagnoses that the floor reaction force detector is abnormal when the output of the floor reaction force detector is not within a predetermined range (column 4, lines 40-67; column 5, lines 1-15).

With respect to claim 23, Takenaka et al. teaches wherein the onboard equipments include sensors that detect a current supplied (fig. 2, 23) to the drive motor and a temperature (column 8, lines 36-39) of the drive motor, and the self-diagnosis means self-diagnoses that the drive motor is abnormal when at least one of the detected current and temperature is not within a corresponding one of predetermined ranges set respectively with respect to the current and temperature (column 7, lines 56-67; column 8, lines 1-14).

With respect to claim 24, Takenaka et al. teaches wherein the onboard equipments include a battery (fig. 2, 15) that supplies a current to the control unit and the drive motor and a voltage sensor (fig. 2, 24) that generates an output indicative of a voltage of the battery, and the self-diagnosis means self-diagnoses that the battery is abnormal when the output of the voltage sensor is smaller than a predetermined value (column 2, lines 23-67).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15 and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Takenaka et al (US 6,064,167).

With respect to claim 15, Takenaka et al. teaches wherein the stable state driving means drives the robot into a stable state in response (column 2, lines 1-15) to the discriminated degree of abnormality based on a predetermined action plan chart.

Takenaka does not teach a predetermined action plan chart. Takenaka invention teaches predetermined action to various happenings from input sensor and the environment. It would have been obvious to format this into a chart, capable of a person of ordinary skill in the art, in view of the teaching of technique for improvement in other situations.

With respect to claim 26, Takenaka et al. does not teach an operator's operation control unit provided outside the robot and comprising a microcomputer that includes the external memory; and communication means connecting the control unit and the operator's operation control unit for establishing communication there between; and the self-diagnosis means self-diagnoses whether the communication means is abnormal.

Takenake et al teaches all of parts of claim 26, except for external operator control. It would have been obvious to take all of the established element, and have them external, Applying a know technique to a robot for improvement to yield predictable results.

Claims 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takenaka et al (US 6,064,167) in view of Saijo et al (US 6,584,377).

With respect to claim 25, Takenaka et al. does not teach wherein the onboard equipments include a voice recognition system that enables voice communication with an operator.

Saijo et al teaches wherein the onboard equipments include a voice recognition system that enables voice communication with an operator (abstract; fig. 4, 53, 54, and 60). It would have been obvious obvious to try a known technique, capable of person of ordinary skill in the art, in view of the teaching of the technique for improvement in other situations.

Allowable Subject Matter

Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erick Glass whose telephone number is (571)272-8395. The examiner can normally be reached on 9-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 571-272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EG
/Lincoln Donovan/
Supervisory Patent Examiner, Art Unit 2837